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EXAMINER
FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
2172	19

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>RCE 02/27/03</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30,47-50,83 and 84* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30,47-50,83 and 84* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

1.   Claims 1-30, 47-50 and 83-84 are remained pending for examination.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-30, 47-50 and 83-84 have been considered

but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 U.S.C. § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-30, 47-50 and 83-84 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Doktor (US Pat. No. 5,617,567) in view of Kurz (US Pat. No. 5,386,571)("Doktor"),

("Kurz").

As per claims 1, 47 and 83, Doktor teaches a data processing system comprising a data

storage device and a processor programmed to read data from, and write data to, said storage

device (thus, the database system 100 comprises a central processing unit 110 which is

operatively coupled so as to be controlled by an access control program 120d stored in a first

memory means 120, read-only-memory or random access memory; which is equivalent to data

storage device and a processor programmed to read data from, and write data to, said storage

device)(see col. 8, lines 5-10), as claimed in which said storage device stores multiple operation

records each storing data relating to one or more historical operation involving at least one entity

(see col. 27, lines 62-64)(thus, table may be used to define a continuously expandable backbone

with supports various relationships between various entities instances, which is readable as

storage device stores multiple operation records each storing data relating to one or more

historical operation involving at least one entity), each said operation record comprising data

recording the operation (thus, each of these answer is recorded as a paired set of an entity class

number and an entity instance number, in response the entity storage means then produces

detailed information from the referenced entity instance tables; which is readable as multiple

each said operation record comprising data recording the operation)(see col. 33, lines 1-8), each

said entity being an identifiable thing within a business or other undertaking to which

information resulting from a transaction, measurement or other such assignment can be related

(thus, each of these bubbles is referred to as an 'entity type' or 'entity class', the 'customer' entity

class generically covers all entities which might fit under the broad descriptor 'customer'

regardless of whether that entity is a natural person, a business corporation, an association or so

forth, the 'address' entity class covers all entities which fit under the broad descriptor 'address'

regardless of whether the subject entity is a residential address, a business address, a post-office

mailing address or so forth, similarly the 'account' entity class covers all sorts of accounts

including savings accounts, checking accounts, trust accounts; which is readable as each said

entity being an identifiable thing within a business or other undertaking to which information

resulting from a transaction, measurement or other such assignment can be related)(see col. 17,

lines 2-13); and

b) multiple entity records storing data indicating relationships between said entities (thus,

storage space is conserved in cases where plural entities of a first type are related to a common

entity of a second type; which is equivalent to multiple entity records storing data indicating

relationships between said entities)(see col. 15, lines 27-29). But, Doktor does not explicitly and

data defining a date associated with the operation, and each said relationship being associated

with a historical period of validity. However, Kurz implicitly indicates the entity contract may

comprise the additional attributes date of signature and period of validity; which is readable as a

date associated with the operation, and period of validity, (see col. 5, lines 51-53). Thus, it

would have been obvious to a person of ordinary skill in the art at the time the invention was

made to modify the teachings of Doktor and Kurz with data defining a date associated with the

operation, and period of validity. This modification would allow the teachings of Doktor and

Kurz to improve the accuracy of the data processing system, and provide an improved method for

storing of an entity relationship diagram (see col. 2, lines 42-43).

As per claim 2, Doktor teaches a system as claimed, wherein the processor is

programmed to extract output data from a subset of said operation records, and to output said

output data (thus, all store of relational inquires can be answered by starting with a known first

instance of a first entity class irrespective of whether the class is a head entity class or tail entity

class, and searching through the relational instance table 730 to locate all relationship instances is

a member; which is readable as extract output data from a subset of said operation records, and to output said output data)(see col. 25, lines 18-30).

As per claim 3, in addition to the discussion in claim 1, Doktor further teaches inputting instructions defining one or more selected entities for which said output data relates (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entities in the relation instances table; which is readable as inputting instructions defining one or more selected entities for which said output data relates)(see col. 7, lines 17-19).

As per claims 4 and 7, in addition to the discussion in claim 1, Doktor further teaches selecting said subset using those selected entity relationships (thus, relational database tables are normally organized to create implied set and subset relations between their respective items of pre-stored information, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; which is readable as selecting said subset using those selected entity relationships)(see col. 5, lines 36-41).

As per claim 5, in addition to the discussion in claim 1, Doktor further teaches to permit analysis of operation records anterior to that date as if the current relationship between entities had previously existed (see col. 5, lines 36-41).

As per claim 6, the limitations of claim 6 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

As per claim 8, Doktor teaches a system as claimed, wherein the processor is programmed to input a change from an existing said relationship between entities to a new said relationship (thus, databases require similar restructuring every time a new category of information relationships or a new type of inquiry is created, which is equivalent to input a change from an existing said relationship between entities to a new said relationship)(see col. 3, lines 43-45).

As per claim 9, in addition to the discussion in claim 1, Doktor teaches to create a record of the new relationship (thus, databases require similar restructuring every time a new category of information relationships or a new type of inquiry is created, which is equivalent to create a record of the new relationship)(see col. 3, lines 43-45).

As per claims 10 and 26, in addition to the discussion in claim 1, Doktor teaches an association record for each past or present relationship between a pair of said entities (thus, each of these answer is recorded as a paired set of an entity class number and an entity instance number, in response the entity storage means then produces detailed information from the referenced entity instance tables; which is equivalent to an association record for each past or present relationship between a pair of said entities (see col. 33, lines 5-12).

As per claim 11 and 12, the limitations of claims 11 and 12 are rejected in the analysis of claim 48, and these claims are rejected on that basis.

As per claim 13, Doktor teaches a system as claimed, wherein the entity records represent first and second successive levels of hierarchy of a product family (see col. 3, lines 43-45).

As per claim 14, the analysis of claim 14 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

As per claims 15 and 49, in addition to the discussion in claims 1, Doktor teaches to use said hierarchically higher entity instead of said selected entity in selecting said subset of operation records (thus, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; which is readable as said hierarchically higher entity instead of said selected entity in selecting said subset of operation records)(see col. 5, lines 36-40).

As per claim 16, Doktor teaches a system as claimed, in which said storage means contains multiple sets of said operation records, each said set comprising multiple said operation records, said sets relating to different classes of operations and said records within each set relating to different instances of the same type of operation (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entries in the relation instances table, adding new rows to this relation instances table allows for the addition of new relations, adding new rows to the table allows for the creation of new classes 'types' of relationships; which is readable as said sets relating to different classes of operations and said records within each set relating to different instances of the same type of operation)(see col. 7, lines 18-21).

As per claims 17, Doktor teaches a system as claimed, in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure (thus, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; which is readable as in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure)(see col. 5, lines 36-40).

As per claims 18 and 20, Doktor teaches a system as claimed, in which said storage means further contains: c) metadata comprising multiple operation definition records, each defining the format of records of a respective said set of operation records (thus, storage space is conserved in cases where plural entities of a first type are related to a common entity of a second type; which is readable as multiple operation definition records, each defining the format of records of a respective said set of operation records)(see col. 15, lines 27-29).

As per claim 19, in addition to the discussion in claim 17, Doktor further teaches in which each operation definition record indicates the units of said measure (see col. 21, lines 45-49).

As per claims 21 and 50, in addition to the discussion in claim 19, Doktor further teaches where said measure could be derived from alternative said sets, select one of said sets (thus, relational database tables are normally organized to create implied set and subset relations between their respective items of pre-stored information, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; which is

readable as measure could be derived from alternative said sets, select one of said sets)(see col. 5, lines 36-42).

As per claim 22, Doktor teaches a system as claimed, wherein said selection is based at least in part on the relative sizes of said sets (thus, since the tables may be expanded as desired by adding new entries to empty middle or bottom slots found within them, a lay user can create new entities; which is readable as wherein said selection is based at least in part on the relative sizes of said sets)(see col. 28, lines 6-9).

As per claim 23, Doktor teaches a system as claimed 23, wherein said selection is based at least in part on the relative difficulty of deriving said measure from the data stored in the variable data fields of each of said sets (see col. 28, lines 6-9).

As per claim 24, in addition to the discussion in claim 21, Doktor teaches where necessary, derive said measure from a combination of a first value from a variable data field of a record of a first set of operation records, and a second first value from a variable data field of a record of a second set of operation records (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entities in the relation instances table; which is readable as a combination of a first value from a variable data field of a record of a first set of operation records, and a second first value from a variable data field of a record of a second set of operation records)(see col. 7, lines 17-19).

As per claim 25, the limitations of claim 25 are rejected in the analysis of claims 1 and 24, and this claim is rejected on that basis.

As per claim 27, Doktor teaches a system as claimed, wherein said transactions are sales, inventory, or purchase transactions (see cols. 19-20, lines 61-34).

As per claim 28, Doktor teaches a system as claimed, wherein said processor is programmed to load one or more new said operation records into said storage device (see col. 3, lines 43-45).

As per claim 29 and 30, in addition to the discussion in claim 28, Doktor teaches in which said processor is programmed to determine whether said new operation records comply with said metadata (thus, storage space is conserved in cases where plural entities of a first type are related to a common entity of a second type; which is readable as which said processor is programmed to determine whether said new operation records comply with said metadata)(see col. 15, lines 27-29).

As per claim 48, in addition to the discussion in claim 1, Doktor further teaches wherein the entity records comprise a hierarchical structure, in which at least d first entity record relates to a specific entity, and a second to a more generic entity encompassing said specific entity, said records including link data linking said first and second entity records whereby to allow said processor to traverse said hierarchy (thus, wherein logical links between a first informational object first piece of real data and a second informational object second piece of real data are established by a chain of direct or indirect address pointers; which is readable as in which at least

a first entity record relates to a specific entity, and a second to a more generic entity

encompassing said specific entity, said records including link data linking said first and second

entity records whereby to allow said processor to traverse said hierarchy (see col. 3, lines 64-67),

said processor being arranged to generate output data by inputting instructions defining one or

more selected entity dimensions across which said output data is to be distributed (see col. 4,

lines 4-9).

As per claim 84, in addition to the discussion in claim 1, Doktor further teaches, if all

required said operation records do not relate to entities of the dimension to which the operation

records relate, the processor is programmed to determine, from said entity records, a

hierarchically higher level entity dimension and to repeat said determination and, in the event

that all required said operation records relate to said hierarchically higher level, to use said

hierarchically higher entity instead of said selected entity in selecting said subset of operation

records (thus, relational database tables are normally organized to create implied set and subset

'relations' between their respective items of prestored information, the elements of the lowest

level subsets are stored in base tables and higher level sets are built by defining in other tables

combinations of keys which point to the base tables; which is readable as a hierarchically higher

level entity dimension and to repeat said determination and, in the event that all required said

operation records relate to said hierarchically higher level, to use said hierarchically higher entity

instead of said selected entity in selecting said subset of operation records)(see col. 5, lines 37-

42).

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rosensteel, Jr. et al. US Patent Number 6,167,405 relates to populating data warehouses.

Conclusion

5.   Any inquiry concerning this communication from examiner should be directed to Jean Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday through Friday from 7:30 A.M. to 6:00 P.M.

If any attempt to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Mrs. KIM VU can be reached at **(703) 305-8449.** The FAX phone numbers for the Group 2100 Customer Service Center are: *After Final* **(703) 746-7238,** *Official* **(703) 746-7239,** and *Non-Official (703) 746-7240.* NOTE: Documents transmitted by facsimile will be entered as official documents on the file wrapper unless clearly marked *"DRAFT".*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2100 Customer Service Center receptionist whose telephone numbers are **(703) 306-5631, (703) 306-5632, (703) 306-5633.**

Jean Bolte Fleurantin

March 22, 2003

JBF/

SHAHID AL ALAM
PATENT EXAMINER